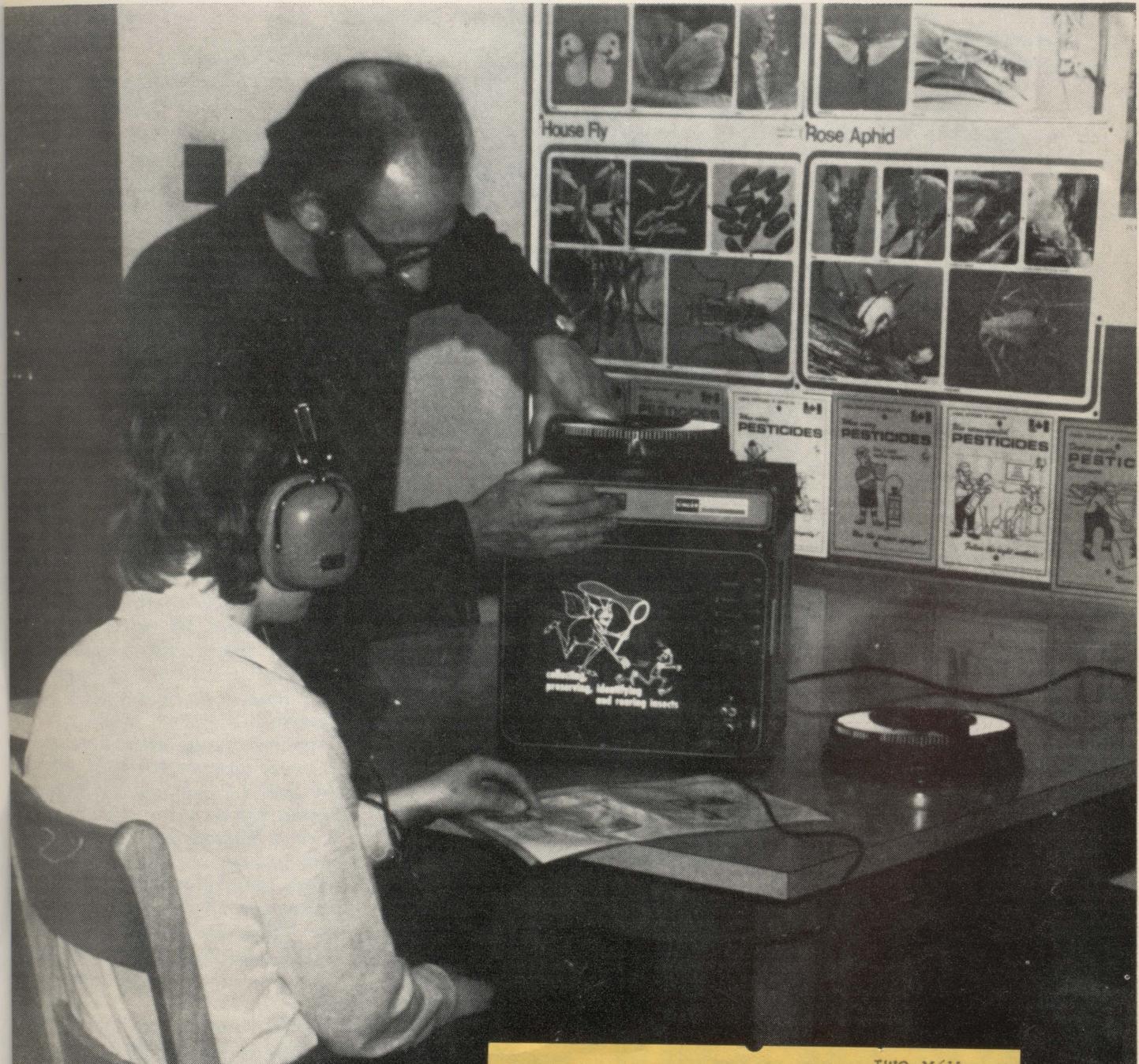


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THE MACDONALD LASSIE

# THE macdonald JOURNAL

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## Journal Jottings

Visualize, if you will, a large amphitheatre filled to overflowing with new students and way, way down there, almost a blur in front of the blackboard, stands their instructor. One professor said that as he enters this room each week he feels like a gladiator in ancient Rome. Will those above him turn thumbs up — or thumbs down? Another has commented that with this method of teaching the subject matter often goes straight from the ear to the hand, missing the brain entirely. Among other drawbacks, it is difficult for the teacher and for the student to be an individual in this type of atmosphere.

The atmosphere is entirely different in the room I visited a couple of weeks ago on the fourth floor of the Main Building here at Macdonald. Comfortable armchairs encircle a coffee table; bright posters and charts and pictures

cover the walls, and wherever you glance you see various types of audio-visual equipment and books, pamphlets, and papers. It is an ideal atmosphere for learning and for being an individual. The room is called the "Macdonald Centre for Modular Instruction" and is under the direction of Professor Stuart Hill of the Department of Entomology. He tells us about Modules at Macdonald in this issue.

The curriculum requires that new students take several general courses. It is doubtful that the large lecture room approach to teaching is going to disappear completely, but the modular method certainly seems to be an excellent complement — if not an eventual alternative.

Hazel M. Clarke

# Editorial

Summer holidays to many college students mean vacations, summer schools, travelling, or earning some "hard cash" for next fall. For some students it means a vague, unplanned period of time preceded by weeks or even months of looking for a summer job.

This search is often very difficult and frustrating, or even futile, because there are fewer summer jobs available to accommodate the thousands of college-aged students who "flood" the job market each spring. The situation facing the student is difficult because employers are usually looking for a full-time person who they can train to do a specialized job rather than a transient student who will leave soon after he is hired. As a result, summer jobs often represent boring, menial tasks which can be performed with a minimum of training and skill and which correspondingly deserve only a minimum salary.

The farmer's position as an employer in the job market is perhaps a bit unique in that he

often requires additional help during certain key periods of the season. Often these periods are during the summer months when field crops place their heaviest demands on his workday. But his problem is that he often cannot find qualified part-time help when he needs it. Either the person doesn't know his way around the farm and would require too much training before he could accept any responsibility or the farmer cannot compete with the wages and working hours offered by city employers.

In an attempt to get these two groups of employers and job-hunters together, the federal government is initiating an Agricultural Manpower Assistance program. The program is designed to help meet the needs for seasonal farm labour and at the same time try to attract more young people to farm work.

The program consists of two components: Agriculture for Young Canadians and Canada Farm Labour Pools. The Agriculture for

Young Canadians is designed to attract young people, primarily students under 18, to agricultural work during the summer vacation period and to possible future careers in agriculture. Students hired under the program should preferably have experience with farm machinery or have a general farming knowledge.

Farmers and students who wish to apply for the program should do so at their local Manpower Centre or at student placement offices of colleges and universities.

The Canada Farm Labour Pools program is designed to extend the services of the Canada Manpower Centre by establishing a system of Canada Farm Labour Pools in those areas where there exists a high demand for seasonal farm labour.

Details on both of these programs should be available in early May from your local Manpower office.

Gordon Bachman

# Modules at Macdonald

Professor Stuart B. Hill,  
Department of Entomology

The Professor is getting ready to lecture to his large, first-year class (five minutes before it is scheduled to begin). He mumbles to himself, "Now, what was I going to cover today... ah yes, here are the notes, but weren't there some drawings to go with these... they seem to be missing... well, I guess I'll have to do without them... let's see if I still understand this stuff." The bell goes and the Professor enters the class having only read over the first two pages of his notes — hoping that the rest are in order and comprehensible. Fifty minutes later the bell rings again and the students pour out of the class, talking to one another. "What the hell was he on about today?" "I don't know, I didn't follow a word of it." "I slept through most of it." "Oh, you can borrow my notes if you like — we covered the same thing in another course I'm doing." "I'm dreading the exam — I can't imagine what questions he'll set." "I'll be glad when this term finishes." "I'll be glad when I'm finished with University."

While this is fictitious the recent findings of the Carnegie Commission on Higher Education are not. One third of the undergraduates and half of the graduates surveyed cited lack of quality instruction as a major problem in universities.

Universities have responded by allocating funds for the purchase of teaching aids and some have established units charged with upgrading teaching and learning, e.g., McGill's Centre for Learning and Development. Much audio-visual aids equipment is being purchased, often under the pressure of the manufacturers who are capitalizing on the situation, and

much of this unfortunately ends up in the cupboard or is inefficiently used. Professors are being encouraged to state behavioural objectives for their courses and individualize their instruction by converting their courses to a modular format.

What are the underlying causes of our teaching and learning problems? Why don't audio-visual aids always help? What are behavioural objectives, individualized instruction and modules, and how can they help? These are some of the questions that I will try to answer in this article. A model for examining teaching and learning in Universities is provided in Figure 1. Here are some of the factors that are behind our current problems:

1. **Student Differences**, i.e., in background, experience, interests, learning abilities, preferences for particular media and for the timing of their learning. As traditional methods of teaching and evaluation largely ignore these differences, they create problems for some learners and the validity of the grades awarded in such courses are consequently open to question.
2. **Population Explosion in Universities.** As class size increases, students feel more isolated from their instructors. Students are reacting by demanding more personalized forms of instruction.
3. **Information Explosion.** While this has led to the subdivision

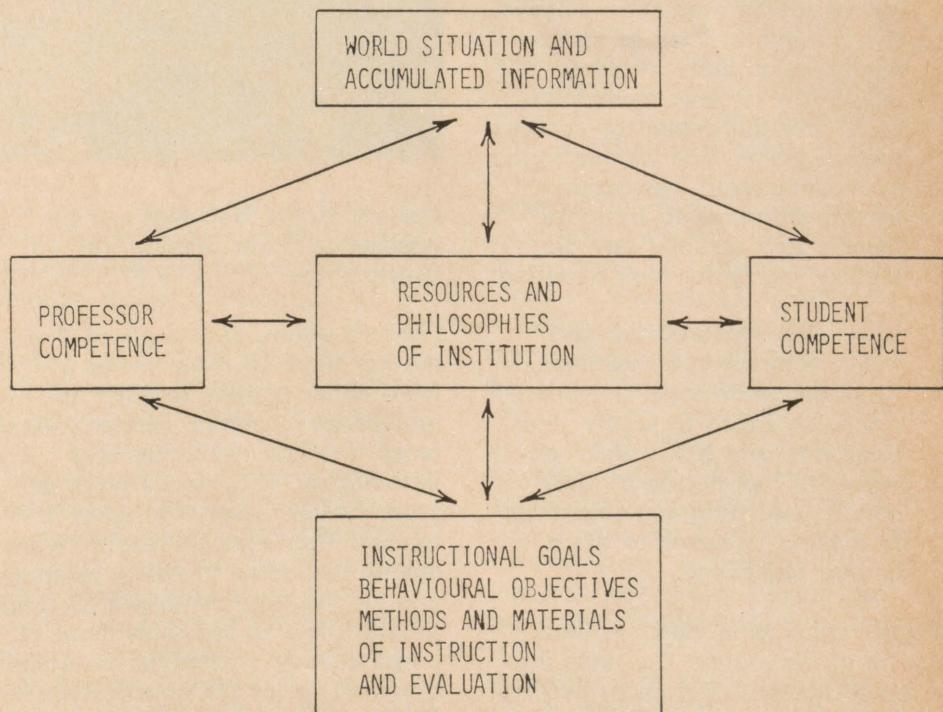


FIGURE 1: A MODEL OF UNIVERSITY TEACHING/LEARNING

Top: Professor Stuart Hill discusses an article in a journal while below he points out a source of resource material.

of some courses others have retained their old format but have shed some of their content. Many educationalists argue that unless we state the behavioural objectives for a course we have no valid basis for deciding what to retain and what to leave out. Another, more indirect, outcome of the information explosion is the establishment of multi-disciplinary, team-taught courses. These are very susceptible to duplication and a lack of coordination. By stating behavioural objectives for each unit these problems can be considerably reduced.

**4. Student Influence in Universities.** Student influence on teaching is increasing through representation on committees, through formal course evaluation surveys, and through articles in student newspapers. Most students would like to have more influence over the design of courses and programs. The various forms of individualized instruction permit programs to be more flexible and actually rely on student inputs for their updating.

**5. Increasing Government and Public Interest in Universities.** More and more often Universities are being asked to justify their programs and state their objectives. The stating of University and program objectives is making it easier to state course objectives.

Thus, there is a need to find forms of instruction that take into account student differences and are personalized, that provide us with a valid framework for selection of course content, that encourage



Photos, including cover, by Helen Liu.



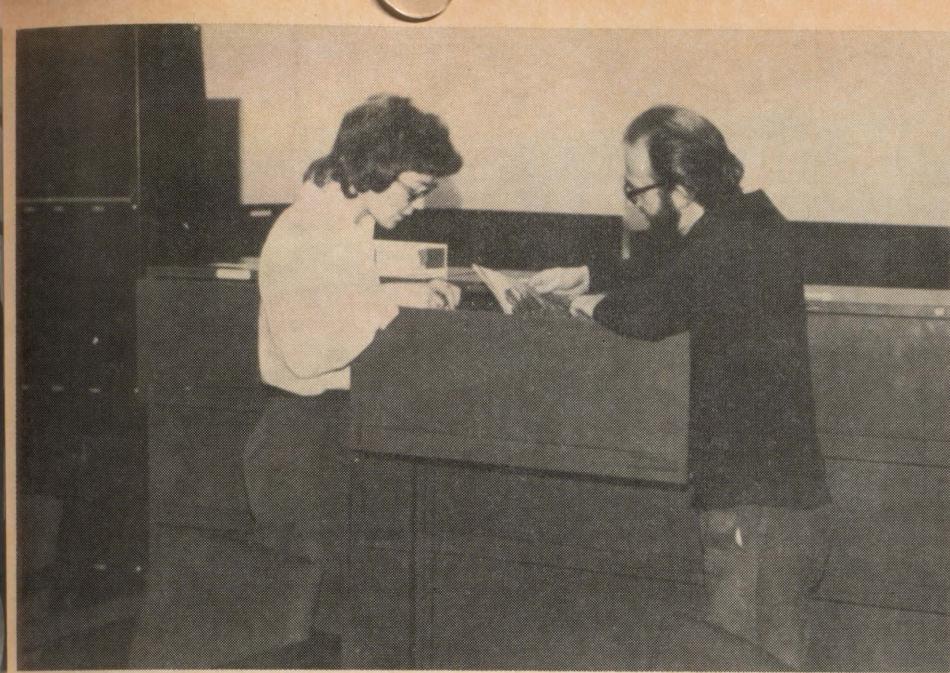
student inputs, and that can be justified to those outside Universities.

I should admit, at this point, that I did not have all these things in mind when I first decided to modularize a course. Rather I was faced, in a course in General Entomology, with two groups of students with very different interests. The "agriculturalists" were mainly interested in killing insects, and the "environmentalists" wanted to learn how to live with them. I had already written down some broad goals for the course (Hill, 1971). This comprised a list containing such words as evaluate, analyse, communicate, synthesize,

identify, plan, and be interested, resourceful, and experienced with special reference to entomology, e.g., "after completing the course you will be able to identify all insects, at least, to the order level", and also "evaluate, criticize and offer suggestions concerning entomological information communicated to you".

The next step was to compile a list of module titles, taking as many alternative approaches to the subject as possible. One of the aims is to provide alternative ways in which certain basic information can be learnt. Thus insect anatomy, physiology, behaviour, and ecology may be studied

Top: A student and instructor can work together or, as below, a student can choose her own material and work on her own.



separately in modules devoted to each of these topics (the Traditional Approach), or they may be studied together in modules dealing with reproduction, getting enough energy to live, getting rid of waste, etc. (the Problem Solving Approach), or they may be studied by examining a particular group of insects in detail (the Classification Approach). Other approaches include the "Habitat Approach", the "Life-Style Approach", and the "Applied Approach". In this way over 40 module titles were listed, many covering subject areas that were not previously covered in this course. When doing the course students must choose about a dozen modules from this list.

The next stage was to write behavioural objectives for each of the modules and to collect together suitable resource materials.

Stating behavioural objectives is not the same as stating the content or goals of a course. For example, one of the modules is entitled "Entomological Literature and Research"; one of the goals associated with this is for students to know about the literature of entomology (whatever that means); and one of the behavioural objectives associated with this goal is that "given a restricted topic in entomology you will, within

a few hours, and using the major abstracting and indexing aids, be able to compile a list of all the relevant papers that were published during any year in the twentieth century". The major difference between goals and objectives is that unlike the former the latter are observable and can be tested. By stating behavioural objectives instructors are in a better position to select suitable methods of instruction and students are able to see what they are likely to get out of the course and how they will be tested (Kapfer, 1971). Other advantages for students, professors, and institutions are given in Table I.

Having decided what abilities we are trying to develop, suitable methods of instruction can be selected, e.g., a laboratory manual, a field manual, an annotated bibliography, an introductory handbook, an audio-tape, a videotaped lecture, a synchronized slide-tape presentation, a filmstrip, a filmloop, etc.

Most of the modules that we have produced, and are producing, are in the form of handbooks, often with an associated filmstrip, although we do intend to produce some tapes to accompany filmstrips. In addition, we purchased some commercially available tapes, slides, filmloops and filmstrips. It is very important to select the most suitable media for instruction. For example, it would be ridiculous to prepare keys on film for identifying insects as these may be needed in the field.

In addition to these materials, the module may contain an optional diagnostic pretest, a list of any prerequisites and materials required,



One section of the room is equipped with carrels and offers the student a quiet area for study using the various audio-visual aids available.

a glossary of terms used in the module, a bibliography, a post-test and a questionnaire for evaluating the module.

Thus, a module is a self-contained, independent unit of a planned series of learning activities designed to help the student accomplish certain well-defined objectives. If the student passes the pretest, he

gets credit for the module and moves on to another one, and even if he does not pass he will not be reexamined on those parts of the test that he did correctly. This eliminates duplication. As students work largely on their own, the inclusion of a glossary is essential and a bibliography highly desirable. The post-test can be taken whenever the student feels that he has mastered the subject. One can only progress to the next module by passing a module. If the student finds that he has not mastered the subject he may repeat the module or do a remedial module and re-sit the test, although the pass mark, which is usually over 80 per cent, is increased the second time around.

The modules, and associated A-V equipment and resource materials, are available in the Centre for Modular Instruction here at Macdonald. The Centre is divided into two main sections: a quiet area equipped with carrels (desks containing the A-V equipment) and tables, and a discussion area equipped with armchairs, resource materials, and the means to make coffee! The instructor, or a teaching assistant, is available in the Centre at all times to answer questions, conduct tests, and administer the Centre.

The production of the modules involved a graduate assistant, a typist, the resources of the Instructional Communications Centre at McGill, and the duplicating service. Others involved were the staff of the Office of Educational Development, which provided financial support, and the personnel of the Centre for Learning and Development (both at McGill), who provided moral support.

TABLE I:

**Advantages of modules ...**

**For Student**

**COMMITMENT ENHANCED  
(BECOMES MORE INVOLVED)  
HAS A CHOICE  
IN CONTROL OF OWN RATE  
OF STUDY  
NO DUPLICATION  
CONSEQUENCES OF FAILURE  
REDUCED  
CONTRIBUTES TO COURSE  
STRUCTURE  
CAN STUDY OUTSIDE  
LECTURE ROOM  
RESPONSIBLE FOR OWN  
LEARNING**

**For Professor**

**AN OPPORTUNITY TO ORGANIZE  
ELIMINATES DUPLICATION  
FOCUSSES ON STUDENT NEEDS  
STUDENT CAN ASSESS HIS  
OWN PROGRESS  
REDUCES ROUTINE ASPECTS OF  
INSTRUCTION  
FACILITATES UPDATING  
INSTRUCTIONAL MATERIALS  
CAN BE SHARED WITH OTHER  
INSTITUTIONS**

**For Institution**

**MAKES COURSE CONTENT VISIBLE  
TO OTHER DEPARTMENTS  
DIVIDES RESPONSIBILITY  
OF COURSE BETWEEN SEVERAL  
PEOPLE  
MODULES ARE EXPORTABLE  
TEACHING MATERIALS MORE  
COMPARABLE WITH RESEARCH  
PUBLICATIONS**

In February 1973 our first module (Pesticides as Pollutants) was used in the Physical and Biological Aspects of Pollution Course and during the fall term of the same year about half of the General Entomology Course was offered in the modular format. While we have run into a number of minor problems, student response has been largely favourable. Next fall we plan to offer the entire General Entomology course in the modular format.

The question that I am most often asked by instructors is "has this lightened your teaching load?" I used to reply "No" but now I say "Yes—it hasn't decreased the amount of time I put into teaching but, by making it far more challenging and stimulating, it has turned the **teaching load** into a **teaching trip**". However, I should warn you that stating behavioural objectives for the units of instruction within a course is likely to be the beginning of an evolutionary process that leads one to question the objectives of programs, of universities, and indeed of whole societies.

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- Hill, S. B. 1971. Edge punched-cards and graphic models as learning aids for introductory courses in biological subjects. p. 151-159 in "McGill Conference on University Teaching and Learning", McGill University, Montreal.  
Kapfer, M. B. 1971. Behavioural Objectives in Curriculum Development. Englewood Cliffs, New Jersey; Educational Technology Publications.  
The Centre for Learning and Development at McGill have an extensive collection of books and papers, many written by their own staff, on the topics dealt with in this article. They are located in the Macdonald Chemistry Building (392-5273).

# JOHN G. COULSON: A Memorial Tribute

By R. H. Estey, Chairman,  
Department of Plant Pathology

The Macdonald College community lost one of its most distinguished members in the death of Professor John G. Coulson on April 1, 1974.

Born in Zephyr, Ontario, on the 27th of May, 1893, and raised on a general farm, Coulson obtained his early education in near-by Markham, Ontario. After two years of teaching in the public schools of Ontario, and a two-year stint in the Royal Air Force (1916-18), he attended Queen's University for a B. A. (1920) and an M.A. (1921). Following this he went to Macdonald College of McGill University where he taught plant pathology and related subjects for the next 47 years.

Coulson began his career at McGill in 1921, as a Lecturer, working with Prof. B. T. Dickson in the Department of Botany. Five years later he was promoted to a Professorship in the newly created Department of Plant Pathology, the Department of which he became Chairman in 1929. He retained the Chairmanship until 1958, when he reached the age of compulsory retirement from that position. However, he continued to teach plant pathology at Macdonald College until 1968, when he moved from the area to live, until the time of his death, with his sister, Stella (Mrs. Wetherall), in Markham, Ontario.

Professor Coulson taught botany and plant pathology to hundreds of undergraduate students but his chief contribution to phytopathology was through his teaching at the graduate level. He taught plant pathology to 118 postgraduate students and directed the thesis research of more than 50 of them. Although Coulson himself would accept little credit, some of the research by his students and



several aspects of his teaching were landmarks in the development of phytopathology and are now incorporated into standard textbook and reference materials.

With his background in chemistry and botany, it was natural for Coulson to emphasize the chemical and physical aspects of host-parasite relations. This he did long before physiological plant pathology became generally accepted as a topic for study by the majority of his American and European colleagues. His pioneering interest in, and teaching of the effects of disease on the physiology of plants and the interaction between host and pathogen, gave his students a point of view which has since been recognized as an essential ingredient of modern phytopathology.

Professor Coulson also pioneered in the design and construction of controlled environment chambers for research on plant diseases. Some of his ideas and the basic features of the chambers that he designed, and had constructed at

Macdonald College, are now being used by manufacturers of various controlled environment facilities.

Although there are many visible reminders of his lengthy presence at Macdonald College, the invisible contributions that he made to phytopathology through his students are far more significant. A number of his former students have held positions whereby they, in turn, could pass some of his concepts and ideas to many others. These have included two Deans of Faculties of Agriculture, 20 university Professors, 10 Heads of research stations or laboratories, and at least 13 high school Biology Teachers.

Professor Coulson always shunned the limelight and he never sought honours or praise; nevertheless, he was honoured by the award of Fellowships in the American Association for the Advancement of Science (1938) and the Agricultural Institute of Canada (1952). The University of Montreal conferred upon him the degree of D. Sc. honoris causa in 1948 and McGill University honoured him with the rank of Professor Emeritus in 1963. La Corporation des Agronomes de la Province de Quebec gave him its highest accolade, that of the Ordre du Merite Agronomique, in 1959, and he was awarded honorary life memberships in The Pomological and Fruit Growing Society of Quebec (1935), the Canadian Phytopathological Society (1955), and the Quebec Society for the Protection of Plants (1957).

Those of us who had the privilege of being his students, together with his colleagues and innumerable other friends will long remember the quiet wisdom and the total lack of affectation of Professor John G. Coulson, educator extraordinary.

# Cutting Costs of Subsurface Drainage

by Professor R. S. Broughton,  
Department  
of Agricultural Engineering

For many people used to draining clays with subsurface drain laterals spaced from 30 to 60 feet it may seem like heresy to suggest that good drainage could be obtained with spacings as wide as 120 feet. However, you may be even further surprised to learn that there are some clay soils in Ontario and Quebec which can obtain much drainage improvement with laterals more than 200 feet apart.

Most subsurface drains in clay soils in southwestern Ontario are installed at spacings of 40 to 60 feet and depths from 2.5 to 3.5 feet. This tradition has grown up because drains at these spacings performed reasonably well and outlet restrictions or digging difficulties militated against deeper drains.

Quebec farming areas have greater drainage problems than most of

southern Ontario because they receive greater precipitation and a shorter growing season. However, subsurface drainage work moved ahead faster in Ontario, largely because Ontario farmers were more able to pay for the drainage installations.

Prior to 1970 most Quebec drainage designs tended to follow textbook recommendations and the Ontario practice of 30 to 60 feet spacings with a norm of about 45 feet. Most of these systems provides good drainage, so why consider a change?

Well, with 45 foot spacings, almost 1,000 feet of drains are needed per acre so subsurface drainage costs exceeded \$200 per acre. Few farmers could afford it. Also, with 3 million or more acres of land needing drainage improvement,

and installation rates of only 5,000 acres per year, it would take 600 years to get the job done. Clearly there was room for some new thoughts and techniques.

Theories of flow to subsurface drains indicate that deeper drains can be spaced wider apart and achieve the same drainage rate if the soil is homogeneous. The theories and resulting drain spacing equations had not been used in Canada to much extent prior to 1970 because: 1. people doubted that many soils were sufficiently homogeneous, 2. deep outlets were often not available, 3. contractors preferred the easy shallow digging tradition allowed.

## Diagonal Drain Experiment

Recognizing that an increase in the spacing between drains from 45 to 120 feet might

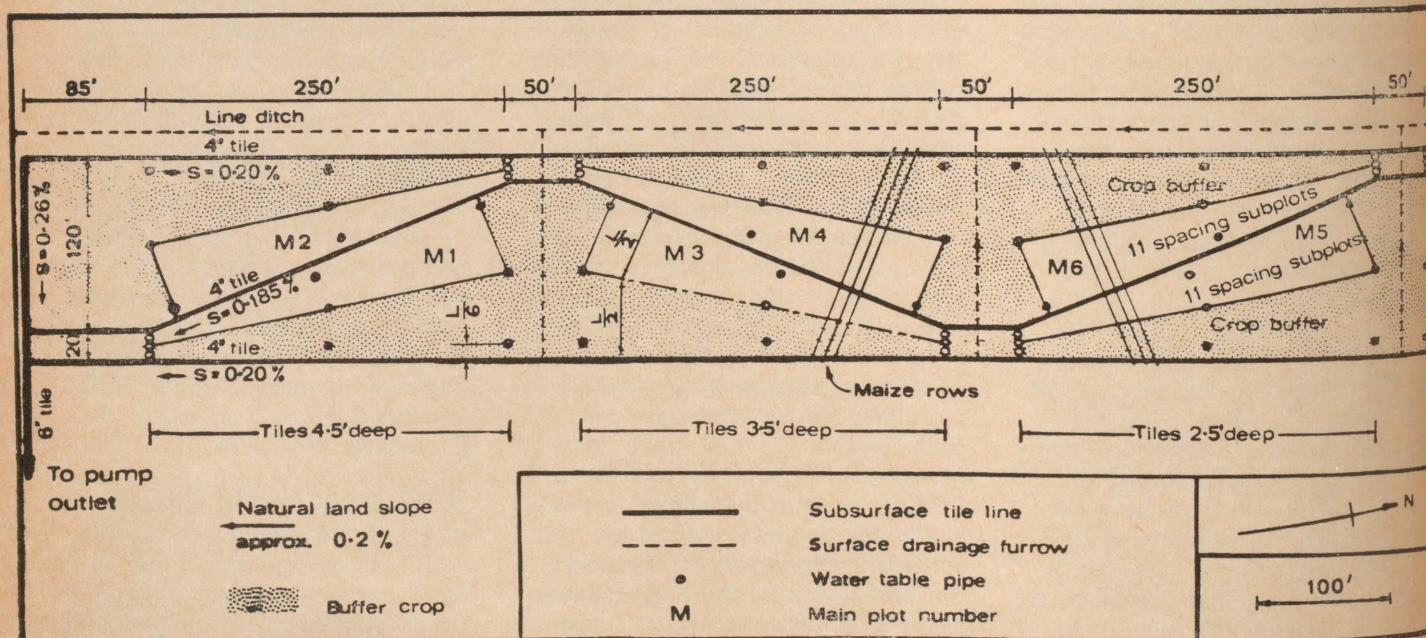


FIGURE 1

LAYOUT OF SUBSURFACE DRAIN DEPTH AND SPACING EXPERIMENT  
Martineau field  
Ste. Rosalie clay

reduce costs from about \$200 per acre to about \$75 per acre, an experimental system was installed on a St. Rosalie clay when a trencher could be obtained in December 1965 even though the digging conditions were very poor. The soil was saturated to the surface and there were 10 inches of wet snow on the surface. The experimental system is shown in Figure 1. Two replicates with drain spacings varying from 20 to 120 feet were installed at each of 2.5, 3.5 and 4.5-foot depths.

The rate of fall of the water table was measured at 20, 60 and 120-foot spacings on each plot. Soil surface conditions were observed and maize yields were measured. The rate of water table drop after a rain or soil saturating irrigation, even at 120-foot spacings was amazingly rapid. The performance was considered excellent at 120-

foot spacings on the plots with drain depths of 3.5 and 4.5 feet but not as good on the 2.5-foot drain depth plot. It was possible to cultivate and plant these drained plots two weeks earlier than adjacent undrained plots.

### Parallel Drain Experiment

Since it might be argued that the drainage performance would not be as good on a system with parallel drains as on a system with diagonal drains, a new system with 3 parallel drains 120 feet apart averaging 4 feet deep and 900 feet long was installed in August 1969 in an adjacent field of Ste. Rosalie clay.

To provide a severe test of the functioning of these drains, the field was irrigated until the water table was brought to the surface three times in August 1970. The rate of

fall of the water tables is shown in Figure 2.

The water table fell remarkably rapidly for a clay field with drains spaced 120 feet apart. Lest anyone think the irrigation did not provide a good test, the performance of the drains in the very wet 1972 summer was excellent. Adjacent fields without subdrains had crops of maize severely stunted with wet weather, but the crop was uniformly excellent on the field with drains at 120-foot spacings.

Could it be that this experiment was located on some isolated patch of soil having a high hydraulic conductivity? Fortunately this was not the case.

### Hydraulic Conductivity Tests

The hydraulic conductivity of the soil in the experimental field was

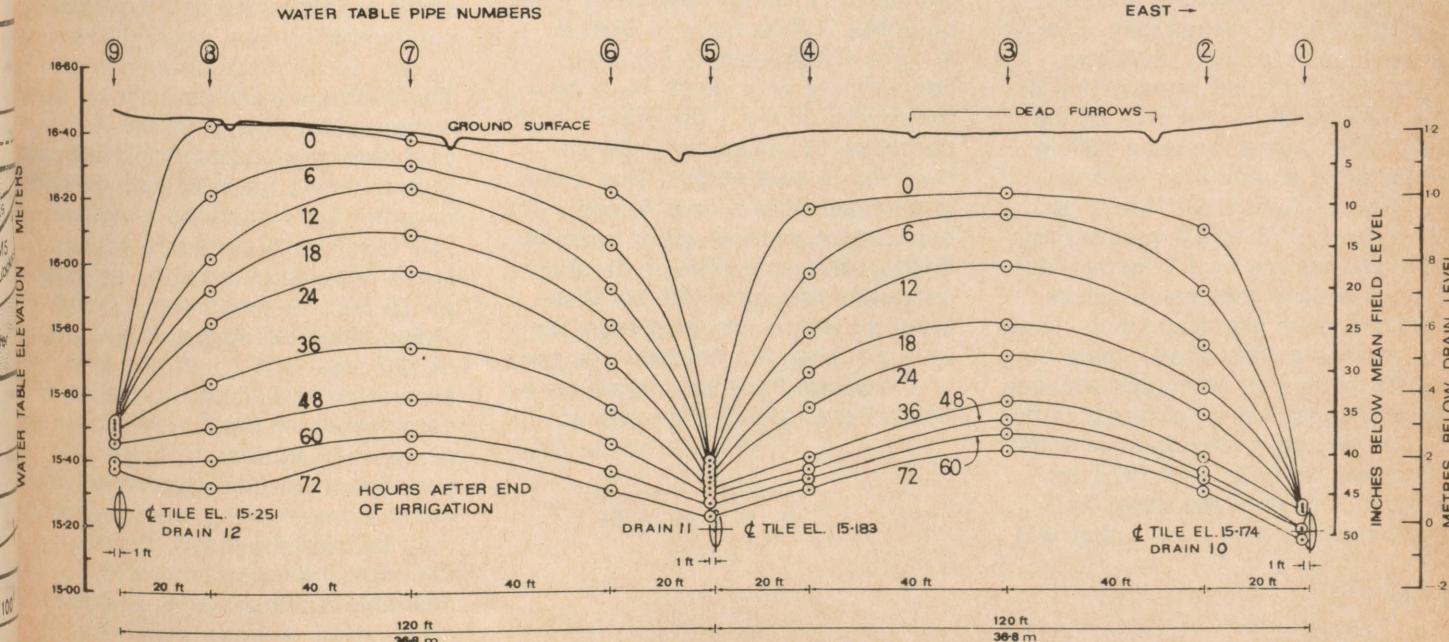


FIGURE 2 Water table positions, average of sections D, E, and F, at successive times after stopping 3rd irrigation at 1830 hrs. on August 16, 1970 Martineau north pasture Ste. Rosalie clay soil

Professor Broughton, right, shows Dr. Mark Waldron, formerly of Macdonald College, how light plastic tile is.



measured by the "single auger hole method" which is extensively used in The Netherlands, Van Beers (1970). Conductivities ranged from 0.56 to 1.27 metres/day with an average of 0.98 metres/day. The hydraulic conductivity was also calculated from the rates of fall of the water table in the area of the subdrains, using Glover's falling water table equation as reported by Dumm (1954) and found to range from 0.98 to 5.4 metres/day with an average of 3.1 metres/day. It was noticed that mean values obtained from the auger hole tests are conservatively lower than the values from the drain performance observations. Similar differences between the two methods have been observed in 1972 and 1973 on other fields. Thus the auger hole tests seem to give results that will

lead to "conservative" drainage designs.

Auger hole tests to obtain hydraulic conductivity values have been made on about 20,000 acres in Quebec in 1973. Differences in hydraulic conductivity with depth have been taken into account for drain design purposes by measuring the conductivity in two stages. One value is obtained from a hole 4 feet deep and a second value from an 8-foot deep hole. The hydraulic conductivities obtained by these tests may then be used together with Houghoudt's equation, or one of the other drain spacing equations. Houghoudt's equation is:

$$S = \sqrt{\frac{4}{R} (K_a h^2 + 2K_b d_e h)}$$

where  $S$  is the spacing between drains, ft.

$R$  is the desired drainage rate, ft/day

$K_a$  is the hydraulic conductivity above the drains, ft/day

$K_b$  is the hydraulic conductivity below the drains, ft/day

$h$  is the height in feet from the centre of the drains to water table at the midspacing between the drains for a root zone depth at which one wishes to retain a value of  $R$  equal to the drainage coefficient.  $h$  is usually taken as the drain depth minus 1.2 feet.  $d_e$  is Houghoudt's equivalent depth of flow conducting layer below the drains.  $d_e$  ranges from 0 to 10 feet depending on the soil and drain spacing.

Since  $d_e$  is of the same order as  $h$ , it is seen that the spacing between drains is approximately proportional to drain depth for the same drainage rate and hydraulic conductivities.

The hydraulic conductivities measured on clays in the St. Lawrence lowlands in 1973 indicate that spacings for adequate drainage on some farms may be as wide as 250 feet, while on some other farms spacings should be as close as 15 feet. A great many farms show allowable spacings in excess of 120 feet. It is doubtful if it is economically justified for most crops to install drains with spacings closer than 40 feet. In cases with very low hydraulic conductivity surface drainage improvements only may be recommended. Surface drainage improvements are desirable on most land and help allow wider spaced subdrains.

Fine sandy loam and silt loam soils are often found to have much lower hydraulic conductivities than clay loam or clay soils.

#### What Differences are there Between the Ottawa-St. Lawrence Lowland Clays and the Central and Southwestern Ontario Clays?

I have not seen hydraulic conductivity values for central and southwestern Ontario clays, but I would expect them to be much lower than those for much of the clay soil in eastern Ontario and Quebec which is located at elevations less than 300 feet above sea level. The clays which have been formed from deposits in the salty Champlain Sea have never been compressed by a glacier.

Much of the unconsolidated Champlain Sea clay appears to develop a good draining structure after initial drainage, drying, and shrinkage. If this structure is not spoiled by compaction from heavy farm machines and cattle traffic when the soils are too wet, there is a prospect for good drainage with wide spacings and much less cost on much of this land. Hydraulic conductivity tests should be made on the flat Ottawa-St. Lawrence lowlands as a guide to drainage designs.

#### A Far-Out Thought for the Future

Subsurface drains 7 feet deep or deeper may be a real desirability on some stonefree land having deep outlet streams or pump outlets.

A soil having a hydraulic conductivity of 1 metre/day and from

which a drainage rate of 0.5 inches/day is desired when the water table is 1.0 feet below the soil surface could be equally well drained by systems with drain depths and spacings given in Table 1. The situations for two alternative equivalent depths ( $d_e$ ) below the drains to an impermeable soil layer are presented in Table I.

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TABLE I: A Comparison of the Spacings and Depths of Subsurface Drains Which Would give an Equivalent Drainage Rate For a Soil With a Hydraulic Conductivity of 1 metre/day Down to a Depth  $d_e$  Below the Drains.

System	Depth to Bottom of Drain ft.	Height from Drain center to Water Table at Mid-Spacing h, Ft.	Spacing Between Laterals Ft.		Feet of Lateral Drains per Acre	
			For $d_e = 4$ ft	For $d_e = 7$ ft	$d_e = 4$ ft	$d_e = 7$ ft
A	2.5	1.3	62	80	702	545
B	4.0	2.8	98	122	445	357
C	6.0	4.8	140	169	311	268
D	8.0	6.8	179	212	243	205

The data in Table I indicate that a real benefit in reducing the number of feet of subsurface drains needed to drain an acre of land is possible if the soil has a reasonably uniform hydraulic conductivity and the outlet conditions and trenching equipment will allow deeper placement of the subdrains.

# The Family Farm

Published in the interests of the farmers of the province by the Quebec Department of Agriculture

## SMALL FARMS DEVELOPMENT PROGRAM

### Eligible Buyers and Sellers

The Departments of Agriculture of Canada and Quebec recently concluded an agreement about the small farms development program in Quebec. The following is the substance of a communiqué issued jointly by the bodies concerned in order to help eligible farmers to take advantage of the program.

### Invitation to farmers who want to participate in the farm transfer program

Before undertaking to sell or buy a farm, get in touch with the local office of the (federal) Farm Credit Corporation or the Quebec Farm Credit Bureau to find out whether you are eligible. Don't run the risk of losing a grant or missing a chance to obtain special credit by acting too quickly without knowing or understanding the requirements for eligibility.

### The Small Farms Development Program.

The small farms development program announced by the Canada Department of Agriculture came into effect in Quebec on September 27, 1973.

It consists of a land transfer program administered by the Farm Credit Corporation, and of agricultural advisory and farm management services under the responsibility of the Quebec Department of Agriculture.

The program's main aims are as follows:

- to assist operators of uneconomic farms to retire from farming with the help of a grant;
- to help low-income farmers who want to acquire the additional land they need to set up an economic farming operation, by making special purchasing loans available to them.

### Farm Transfer Program

#### Vendors

The farm transfer program helps farmers wishing to sell their farms to retire or engage in some other activity.

To help such farmers sell their farms, the program offers:

- a service listing farms for sale by those who are eligible for a vendor's grant; this service is provided by the Farm Credit Corporation, the Quebec Department of Agriculture, and the Quebec Farm Credit Bureau;
- a grant in cash or in the form of an annuity.

Any farmer who appears to qualify as a vendor under this program may have his farm listed. The lists, giving the names of vendors may be consulted by prospective buyers.

Eligible vendors will be entitled to a basic grant of \$1,500 plus 10 per cent of the actual sale price of their farm. However, the sale price may not exceed \$20,000, which means that the grant is limited to a maximum of \$3,500.

If the farmer sells his farm through the Farm Credit Corporation, he may also receive his net equity thereby realized, either in cash or in the form of an interest-bearing annuity.

#### Eligibility for the Grant

To qualify for the grant, a vendor must satisfy the following conditions:

- be a Canadian citizen or a landed immigrant;
- be an owner or purchaser under an agreement of sale or holder under a location ticket or equitably entitled to ownership by inheritance of an uneconomic farm on the date when the program was announced (April 1, 1972) and also at the time of the application;
- be principally occupied with the agricultural operation of the property concerned;
- be able to show that he will have, following the sale, sufficient assets and resources to provide for his needs and those of his dependents;
- agree not to operate a farm on his own account in the future;
- sell virtually all of his farm for not more than \$20,000;
- sell to a Canadian citizen or landed immigrant;
- sell to a purchaser who will not operate the farm as a separate uneconomic unit.

The vendor of a small farm may remain eligible while still retaining

ownership or right of occupancy and use of the farmhouse and of a suitable surrounding area of land, provided that the buyer consents.

It may happen that an eligible vendor whose farm may continue to be used for agricultural purposes may be obliged to move away in order to accept other employment before a buyer can be found. In such a case, the Farm Credit Corporation may buy the farm at a price of up to 90 per cent of its market value. The vendor will then remain eligible for the grant of \$1,500 plus 10 per cent of the market value as determined by the Farm Credit Corporation.

#### Special Purchase Credit

The farm transfer program offers special credit to operators of small farms to enable them to buy farms which are available under the program through an agreement to purchase over a period of time. The benefits of this procedure are as follows:

- in the case of farms selling for \$20,000 or less, a down payment as low as \$200 plus the appropriate legal expenses;
- favourable repayment terms over a period of up to 26 years;
- the buyer is not required to encumber the farm he already owns to guarantee payment for the additional land;
- an eligible buyer may take advantage of this procedure even if his present property is already mortgaged to the Farm Credit Corporation or to another creditor.

#### Eligibility for Special Credit

In order to qualify, the buyer must, at the time of application:

- be a Canadian citizen or landed immigrant;
- be the owner of a farm or the purchaser thereof under an agreement of sale or have been the tenant for at least three years;
- be principally occupied in the agricultural operation of the said farm;
- be capable of successfully operating a bigger farm;
- have net assets which do not exceed \$60,000, not counting personal effects, feeder livestock and produce on hand;
- buy from a vendor who is eligible for a grant under the program.

#### Agricultural Consulting and Farm Management Services

These services are offered by the Quebec Department of Agriculture. The agricultural consulting service will help farmers discover the various possibilities open to them in farming or elsewhere. If a farmer decides to stay in agriculture, the farm management service will provide him with the information needed to develop his farming enterprise.

#### Where to Obtain Information.

Further information may be obtained from local offices of the Farm Credit Corporation or the

Quebec Department of Agriculture. You may get the address of the office nearest to you from the telephone directory or by writing to one of the following addresses:

Farm Credit Corporation,  
Place Laurier, Suite 410B,  
2700 Laurier Blvd.,  
Ste-Foy, Quebec 10.

Farm Credit Bureau,  
945 Turnbull,  
Quebec City, P.Q.

Quebec Department of Agriculture,  
200A Chemin Ste-Foy,  
Quebec 6, P.Q.

#### F1 Beef Cattle-Breeding Program Continued in Ottawa Valley

Mr. Germain Ouellette, the coordinator of the Ottawa Valley Agricultural Region at Buckingham, informs the farmers of the region that the F1 cattle-breeding program will be continued again this year throughout the Ottawa Valley territory.

He said that the mating season for this program began on March 15 and will end about mid-August. The F1 program has now been operating in different parts of Quebec for the past three years and has proved extremely profitable for participating farmers.

According to Mr. Ouellette, the agricultural department's inseminators estimate that about 8,000 cows could profitably be inseminated in the region this year.

Semen from Blonde d'Aquitaine bulls belonging to the St-Hyacinthe A. I. Centre is used for the purposes of the program in the region. As regards appearance, the main characteristics of this breed are a pale-red and black coat and pink mucosa of nose and eyes.

#### How to get an F1 calf:

F1 or first generation hybrid beef-dairy calves are begotten by mating a dairy cow with a beef bull of a local or imported breed.

For the present program, the agricultural department advises farmers to use cows whose milk production is considered rather limited.

#### Financial aspect of the F1 program:

For calves from a cross between a dairy cow and a Blonde d'Aquitaine bull which weigh from 350 to 400 pounds, farmers in the region will receive a minimum of \$1.10 a pound of live weight and 75 cents per pound over 400.

Thanks to this program, Ottawa Valley farmers will earn extra income and put their less satisfactory cows to best use. Furthermore, with the returns from the sale of their F1 calves, they will be able to buy replacement females for their dairy herd which are better than some of those they now have.

Interested farmers may obtain any further information they would like to have about this matter by consulting their inseminator.

#### The Farm of Howard McLaughlin

Low (Gatineau)

**838 points**

Mr. Howard McLaughlin, who is 35 years of age, has worked the 350 acre farm left to him by his father in the Low district since 1963. The farm's 150 acres of cropland consists of mainly clay soil. Another 100 acres or so of land are rented to pasture the cattle on. Owing to the lie of the land, some parts of the farm are still hard to drain in spite of the work that has been done.

The competitor buys about three tons of fertilizer every year for his fields, the formula being chosen to meet the needs of the soil and the crops which are to be grown in it. This commercial fertilizer supplements the manure spread on the corn land and the hayfield in the fall. Lime is also applied — to the extent of 28 tons between 1968 and 1973.

Twenty-six acres are in grain. The best-looking crop is the 12 acres of corn whose planting density and normal development for the time of year promise a very good yield. The stand of oats is less even; too much moisture will reduce the yield.

The hayfields, mainly based on timothy, occupy 83 acres. They yield well but, even so, a small quantity of hay has to be bought. On the whole, the pastures are good; some paddocks are rough pasture.

The crops are used to feed cattle of average quality. Mr. McLaughlin's herd consists of 40 cows and 38 head of young stock. His entry form for the competition puts the average annual milk yield of the cows at 8,836 pounds. Cows whose calves are not going to be raised for herd purposes are bred to a Hereford bull. About a dozen butcher cattle are being fattened this year.

Although it was built 24 years ago, the barn, with a wooden silo in the middle, is very suitable. The main stabling section holds 31 head; the other stabling part, which is at right angles to the main one, is used for animals kept under loose-housing conditions. The prefabricated milk-house contains a bulk tank which will hold 4,429 pounds of milk.

There is a complete set of farm machinery. The equipment represents an investment of \$12,000.

Mrs. McLaughlin's housekeeping is made lighter thanks to the many appliances with which the home is provided. Mr. and Mrs. McLaughlin have four children.

(From the reports of the 1973 Quebec Agricultural Merit Competition.)

## Crop Insurance Its place in Quebec Agriculture

The Quebec Crop Insurance Act was passed on June 29, 1967 and the Board started its first year of insurance operations in January 1968.

Among the principal factors leading to the introduction of crop insurance in Quebec were the particularly heavy crop losses from drought throughout the province in 1965 and repeated requests at that time by the Catholic Farmers' Union for a permanent and adequate measure to protect agricultural producers.

There is still a tendency in farming circles to think of crop insurance as a kind of social assistance measure as though it were a sort of guaranteed-profit or guaranteed-income plan.

It must be stressed that none of these terms are in keeping with the spirit in which crop insurance was conceived and put into effect.

First and foremost it must be understood and used as a tool of sound farm management, since it is an effective means of protection — the only one at the moment available to the farmer for insuring against crop losses caused by bad weather.

Its value and usefulness make it worthy of increasing acceptance by our farmers.

Crop insurance is an essential adjunct to the putting into effect of recommended farming techniques

and, in our Quebec agriculture it has a specific role to play through incorporation in the financial set-up of every farming enterprise. The larger the capital investment needed by a farming enterprise, the more crop insurance becomes a necessity to protect that investment.

In the operation of any commercial or industrial enterprise there are imponderable eventualities about which even the most dynamic entrepreneur is powerless and which, if they occur, may get him into serious financial difficulties and even bankruptcy. To cope with some of these imponderables, a serious person will use all the means at his disposal and hence take out various insurance policies.

The same reasoning applies to a farmer as the head of an enterprise. However efficient the financial and technical management of his farm, certain unpredictable factors are beyond his control. One of the most unforeseeable but, sooner or later, most inevitable of these is, undoubtedly, adverse weather conditions. Indeed, one rarely meets a farmer who has not at one time or another had to suffer the unhappy and irremediable consequences of a poor growing season.

Crop insurance, like an umbrella, is just the answer to these imponderables and anyone who makes his living by farming should make it an obligation to take out crop insurance and keep on doing

so year by year. In this way, it will always be there in case of need to protect the man who has had the foresight to take advantage of it and to spare him the anxiety of seeing his enterprise financially burdened or irreparably endangered by climatic factors.

The Crop Insurance Board offers Quebec farmers coverage for a wide range of crops, as listed below with dates when they first became insurable:

Starting 1968, forage crops, meadow hay, greenfeed (cereal hay), silage corn, oats, barley, mixed grains, spring wheat, grain corn, and cigarette tobacco; 1969, winter wheat and sugar beets; 1970, cigar and pipe tobacco; 1972, late varieties of apples; 1973, potatoes and canning vegetables.

Thus, the great majority of plants grown on the farms in our province are now covered by crop insurance plans.

More farmers would find it advantageous to insure their crops every year, for the following reasons:

—They pay only half the premium, the cost of paying the other half being shared equally by the government of Quebec and the government of Canada.

—The cost of administering the plans is not included when the premium rates are being calculated because that expense is also shared equally between the two governments.

—In certain cases and on certain conditions, payment of an assessment to insure forage crops may entitle the insured to draw compensation to carry out urgent field compensation for loss of pasturage when damages payable for forage crops are due to freezing of the ground or drought, and payment of "replacement indemnity".

—In case of losses, the crop insurance plan guarantees the insured party recovery of part or all of his operating costs.

—Crop insurance makes it easier for the insured to obtain credit and safeguards him from getting too heavily into debt.

—It also makes it possible to calculate yield averages more accurately and know exact acreages of insured crops.

—It promotes sound farm management and use of recommended farming methods.

—It covers crops against climatic conditions that are beyond human control.

It's no mistake to insure crops every year.

If the crop is a good one, there is no problem and the surplus production very easily pays the cost of insuring it.

If the crop is a poor one, the insured is eligible for compensation, which, all things considered, covers production costs as regards the time and money which were invested in them.

For all further information about crop insurance, please contact the

regional representative of the Board in your territory or apply to the head offices of the Quebec Crop Insurance Board, Government Buildings, Quebec City.

#### Promotion of Fur-Farming

The aim of the fur-bearing animals Section of the Quebec Department of Agriculture is the constant improvement of herds of fur animals with a view to increasing their value and profitability. The following technical services are put at the disposal of breeders for this purpose:

#### Herd management

1. Selection of breeding stock and judicious choice of the numerous mutations in accordance with the requirements of the rapidly developing market;
2. Surveillance at regular intervals of a nucleus of select breeding stock within each herd with a view to the genetic improvement of lines;
3. Help with feeding formulas suited to the condition of the herd, the purpose for which the animals are used, and the availability of feedstuffs;
4. Microscopic examination of semen at mating time;
5. Expert advice at the time of birth, weaning, growth, and fur development.

#### Ranch management

1. A loan program for mink production. The Department of Agriculture acts as guarantor of an annual bank loan to the fur producers' cooperative association ("l'Association coopérative des producteurs de fourrure") secured by agricultural pledge. This program is administered by the agri-

cultural technicians of the fur-bearing animals' Section;

2. Help for breeders with book-keeping and drawing up balance sheets. If necessary, after studying the results of the operations, the agricultural technician will suggest corrective measures and carrying out of a program designed to make the enterprise more profitable;
3. Ranch organization and advice on the efficiency and output of different machines and items of equipment that are used for automation.

#### Grading

1. Grading of furs according to the national system with a view to more profitable marketing; valuing of pelts to guide the breeder at selling time; careful examination of each pelt from each breeder to detect the strong and weak points of his production and make appropriate recommendations;
2. Inspection, at auctions, of furs from all parts of Canada and information to the breeders present about their value and also about the way auctions are conducted;

#### Education

1. Organization of study days and exhibitions by the technicians, who also often act as judges and lecturers;
2. Demonstrations of the preparation of furs, and organization of judging contests; regular participation in the Salon of Agriculture.

#### Research projects

The personnel of the Section collaborate regularly in research on fur animals carried out by the Faculty of Agriculture and Food of Laval University.

This Month  
with the

# Q.W.I.

## Reflections on the Year

Perhaps the highlight of the year for Beech Grove (Pontiac Co.) was the county bus trip to St. George and Toronto in which seven ladies from this area participated. In August a rollicking picnic was held in Gatineau Park. A number of children and young people were present. Sports contests, games, a potluck groaning with refreshments, and gallons of lemonade crowned the day. An item of interest for the grown-ups was a contest: What do you know about this country? The name of the country was, of course, drawn from a hat on the spot.

An exhibit at Shawville Fair, built around the theme "Ye Olde Tyme Recipe Gallerie" was both interesting and informative. Three montages, amply supplied with pictures, gave an insight into the habits, foods, and home cures of the pioneers of our country. A table was set with 100-year-old dishes, articles from the past, and products made from nineteenth century recipes.

Several members attended a Workshop in Quyon and two attended a rug-making demonstration in Bristol.

A Tupperware party, a silent auction, and tickets on a Christmas cake and a cookie jar provided some replenishing funds for the Treasury.

Gifts, plates of cookies and squares, and baskets of fruit were distributed to the sick and shut-ins at Christmas and on other occasions. Handi bags were filled and sent out.

Roll calls of "What would you do if you were 18 again" and "What would you do with a week's vacation" offered a chance to dream and an outlet for the imagination. While such subjects as "A good use for plastic bottles and bags", "A way to brighten your kitchen", "Farm and gardening safety hints", "Name a Canadian bird beginning with your initial" gave an exchange of ideas and helpful information. A Potluck Supper, contests, games and carol-singing brought the year to a close on a note of companionship and merriment.

## Annual Convention

Changing Ways — Changing Days is the theme of this year's Annual Convention which will be held at Macdonald College. The Executive meeting will be on May 28, the Board meeting on May 29 and the General Convention on May 30 and 31. Most of the events will take place in the ballroom of the Centennial Centre beginning at 9:30 a.m. It is hoped that the President of the Federated Women's Institutes of Canada, Mrs. Ellen McLean, will be one of the guest speakers. Remember, not only branch delegates may come to Convention—all branch members are welcome.

## Souvenir Pens

Each pen costs 75 cents and all branches are asked to send their orders together with a cheque to the Q.W.I. office at Macdonald College. All pens should be picked up at the Convention to avoid mailing costs. If any branch is unable to pick up their order at Convention, the pens could be mailed but the branch will have to be responsible for postage costs.

## President's Banquet

The Annual President's Banquet of the New Richmond West branch (Bonaventure Co.) was held on February 15 at the Cascapedia Hotel. About 150 people, including members and guests, attended, and a delicious turkey dinner with all the trimmings was served under the auspices of the hotel's congenial host, Mr. Paul Ferland.

The President, Mrs. Carl Bujold, welcomed all present and extended thanks to those who, in any way, contributed to the work of the Institute. Mrs. Bujold introduced Mrs. Harry Campbell, a 50-year member of the Q.W.I., who brought greetings from the County and Provincial branches. Mrs. Campbell's talk was very appropriate for the occasion, as she gave a summary of work done by Institutes over the past years. This was very informative and gave an insight to the meaning of the Women's Institute motto, "For Home and Country." In closing, she complimented the branch for their work.

The President introduced the guest speaker, Mr. Elmo Geraghty, who chose for his subject "The Role of the Policeman and Its Difficulties." Mr. Geraghty spoke from experience as he had served 10 years on the police force. He described several encounters in which he had been involved and especially stressed the danger of drugs.

After the dinner a social evening of music and dancing was enjoyed by everyone. Much credit is due Mr. Ferland and staff, who spared no effort to make this a very enjoyable event.

## Radio Broadcast

The monthly W.I. radio broadcast on C.K.T.S. was given in February by Canterbury branch (Compton Co.). It was made up of some of our thoughts on the energy crisis and composed by Helen Groom and Jean Bowland. The last half of the broadcast was in the form of a poem with the following introduction:

The energy crisis makes the women of Canterbury think back to the not-so-long ago "good old days." It is only about 25 years since electrical power was installed in this area, and many of you listeners will share in reminiscences of older times. May we ask you to share in a trip today with poetic license — back to Yesterday. There's more to this verse than meets the eye; the first letter of each line spells Canterbury W. I.

Chores were time-consuming, took many hours,  
All done by man-power energy,  
ours.  
No electric gadgets to make our work light,  
The days usefully filled from morning till night.  
Each of the family shared in the planning,  
Running a home took great understanding.  
But the wise parents knew all work and no fun  
Used up incentive, made life dull for each one.  
Reaching neighbours in winter by horse and by sleigh  
You got to church too, in the same healthy way.  
When at night, lamps were lit and stories were told,  
Indeed we remember the Good Days of Old.

This energy crisis we all realize  
May be but a blessing in disguise,  
Bringing folks closer to sharing once more,  
A far greater Power than ever before;  
In the heart of each, some goodness is found  
Knowing that caring will bring people around  
To act with fairness, honesty . . . what's more,  
W. I. members bring these traits to the fore.  
This year we will worry about youth and its dope,  
Mothers and grandmothers will continue to cope.  
Do your best — ask for help as you pray.  
Dear Lord in Your wisdom, show us the way.

## Why Do I Belong to the Institute?

In the community I was brought up in, and in the communities I worked in, Women's Institute was a group that represented the whole community working together for a good cause. It meant good times. It was non-denominational. Everyone could belong regardless of race, creed, or station in life.

At home after my mother became a member and later held the office of branch secretary I helped her with the books, doing the typing for her, which gave me an insight into the work of the Institute.

In the communities where I taught we would brush against Institute members at School Fairs, at the time of school openings when a member would be on hand to present the Women's Institute prizes, at the "Meet the Teachers"

nights when the W.I. would invite the teachers to a meeting with a special program and lunch, at dinners for Fair Directors when the teachers were asked to help wait on tables.

To be sure the rest of the young people and I would "rib" my mother considerably abour "her Institute and their work", but I think it quite safe to say we all secretly looked forward to the night mother hosted the meeting because after the ladies left we would all gather and after an evening of fun help her "get rid" of the leftover goodies.

From the above it is understandable that my mother was surprised when I joined the Institute. After marrying I had not been in the community long when a friendly neighbour asked me to go to a meeting. To join seemed to be the next logical step as I was not teaching and with no family I had time on my hands. At that time courses were being given which sounded very interesting — not that I took any because I moved to the country shortly afterwards.

In my 16 years as a member I have made new friends and have become acquainted with people all across Canada. Being a world-wide institution it has helped to keep me more aware of world happenings. Conveners have brought up many worthwhile topics for discussion. It has furnished me with the incentive to work at handicrafts for which I might not otherwise have found time. I have learned how to conduct meetings and become more aware of parliamentary procedure. It has given me a chance to get up and express my opinions; above

Two 50-year pins were presented recently at the Beebe W.I. in Stanstead County. Mrs. Harold Beane presented Mrs. Elizabeth Miller with her pin, and Mrs. Ezra Woodard received hers from Miss V. Moranville.

all it has given me an interest beyond my own four walls and family. It could have been done in other types of organizations, but I know of no other organization with such a wide scope of interests.

With the busy life of today we need to keep our meetings as short as possible (well planned in advance) but still allow time for worthwhile projects and above all some fun. Each one of us should be prepared to accept duty when asked as it is in becoming active that we get and give the most benefit.

To be able to continue in the future the Institute needs new, young blood most of all. We need to get out and sell the Institute, but before we can sell it we have to have something worth selling. We can never do this by criticizing or by "hanging back in the hutchin'". Maybe we need to reassess our aims to make them something we can all work for together. In some way we need to interest the young people. Could we organize a group of teen-agers or are they all over-organized already?

Mrs. Sterling Parker,  
Megantic Co.

#### Dear W. I. Members:

The heavy spring snowstorm now incision will be but a memory when you read this in May. May — the time when the beauties of spring give such a "lift"... the grass, leaves on the trees, and the flowers!



Beginning a new W. I. year with new programs you have looked for ways to improve your meetings and hoped for fresh inspiration. May I suggest the magic formula of words... of praise and appreciation to your officers and committee members, of encouragement to new officers and workers, and words of welcome to new members and offers to help them "learn the ropes." You know the difference it makes if one of our family notices "what we have been doing all day."

Reports show branches planning a variety of activities. May 18 is the date for Stanstead County May Fair to be held in the Hatley Village Hall from 11 a.m. until 4 p.m. The welcome mat is out for all W.I. members and friends to attend. There will be demonstrations of various types, including needle crafts, sale of plant bulbs, home bake sale, the popular snack bar and fun for the children is another feature. On May 7 at the County annual meeting there will be a speaker from the Free Legal Aid Office at 2:00 p.m. County branches are also presenting a collection of plays at 7:30 p.m. on May 1 at St. George's Church Hall, Ayers Cliff.

**Canterbury's** out-going President, Mrs. Grace MacLeod, displayed a tea cloth given her by Mrs. Findlay Bennett when she was President of the branch in 1949. The cloth, made out of sugar bags, was embroidered in blue and gold with

the names of the 22 members in 1949 (nine of these are still members of the branch). Mrs. Bennett was widely known in community and W. I. affairs and could make a speech "at the drop of a hat" in her own inimitable way.

Some branches report doing hard work at their meetings such as **Rawdon** — a puffed comforter to raffle; a quilting day at **Fordyce**; **Dennison Mills** has quilted a quilt and **Cleveland** is assembling theirs for quilting later. **Fordyce** also enjoyed a "quilting bee."

At **Durham** an 85-year old member crocheted a three-piece buffet set for a raffle by the branch.

And, speaking of hand work, think of the many hours of work **Gore** put into the 6375 cancer dressings and eight hospital shirts for the Cancer Society during the year. Many branches report filling Handi Bags... another time-consuming but worthwhile effort.

Reports show members in a number of branches given prizes for perfect attendance during the past year.

Our congratulations to branches celebrating important milestones this year... **Pioneer** 60 years; **Granby Hill** and **Franklin Centre** 50 years; **Bury** 55 years; **Wright** 35 years and **Matagami** 10 years.

Seven branches report new members... a total of 14, this month.

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Jerusalem-Bethany livened up their meeting with a skit and Franklin Centre went to the Ice Follies in Montreal.

Fordyce made a motion that each member write a letter of protest to Premier Bourassa re: immigrants — their right to choose the language in which their child is taught.

Some branches report donations to Operation Eyesight... ACWW project which combats possible blindness in babies who lack vitamins and proteins.

Some very exciting and amusing tales were told at Lakefield as they related their "most unforgettable experience". Hemmingford members "greatest achievement during the winter months" showed great variety and busy people.

Granby Hill's roll call is food for thought... If your efforts are criticized you have done something worth talking about. And, for a touch of humour, Wright's Motto... Middle age is when the phone rings on Saturday night and you hope it is for someone else.

From Sutton's report... "We have seven New Canadians in our branch and find they have a lot to offer us. In fact, our President is from Holland."

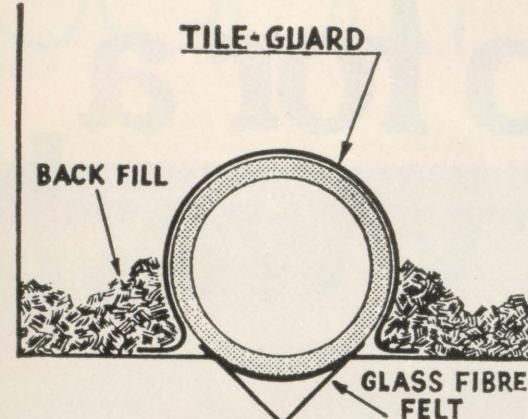
Mrs. E. Orr, Aubrey-Riverfield, and Mrs. Mary Leishman, Jerusalem-Bethany, each received 50-year pins. Frontier presented two 25-year pins. Howick watched a demonstration on making a tossed salad before lunch and they enjoyed the delicious results served as part of their meal. W. I. husbands (of members) often give valuable assistance... a report included two poems (on food) found by a Welfare & Health convener's husband. They were good too.

In closing — from a convener's report... In the conference room or the living room, the worst expression you can wear is one of smugness... If love makes the world go 'round, smugness brings it to a complete halt.

Mrs. Perley Clark,  
QWI Publicity Convener

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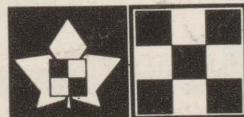
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Earth's appetite grows daily — and with it the need for ever more efficient use of food resources.

At Ralston Purina we believe our agri-products and programs are helping. We're active in many areas that have better foods, more foods and better production methods as their goals.

For example: research into new protein systems. Advice, counsel and arrangement to farm and stock operators around the world. Assistance to private sectors in agri-business. Development of low cost, high nutrition human foods.

We're working on many of the problems you'll be encountering as an agrologist. And we're also looking forward to working with you toward the solutions.



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